INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY

Sermatech-AeroForge Corporation
3901 South Delaware Drive
Muncie, Indiana 47302

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 035-18183-00059	
Issued by: Original signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: February 18, 2004 Expiration Date: February 18, 2009

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in Conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary aircraft engine parts manufacturing source.

Authorized Individual:	General Manager
Source Address:	3901 South Delaware Drive, Muncie, Indiana 47302
Mailing Address:	3901 South Delaware Drive, Muncie, Indiana 47302
General Source Phone:	(756) 747-7147
SIC Code:	3724
County Location:	Delaware
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

(a) One (1) maintenance grind station, identified as PS-2, constructed in 1999, with a maximum capacity of 1 die and 500 pounds of metal dies per hour, all controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-1, consisting of:

(1) three (3) hand grind stations;

(2) one (1) band saw;

(3) two (2) welding stations;

(4) three (3) wet saws;

(5) three (3) belt sanders; and

(6) one (1) machine grinder.

(b) One (1) Wheelabrator steel shot blast machine, identified as PS-6, constructed in 1999, controlled by a fabric filter, identified as PSC-6, and exhausting to stack S-6, capacity: 200 parts per hour, 400 pounds of metal parts per hour, and 1,000 pounds of steel shot per hour.

(c) One (1) Irvin steel shot blast machine, identified as PS-6a, constructed in 1999, controlled by a fabric filter, identified as PSC-6a, and exhausting to stack S-6a, capacity: 500 parts per hour, 300 pounds of metal parts per hour, and 1,000 pounds of steel shot per hour.

(d) One (1) acid bath milling operation using hydrofluoric and sulfuric acids, identified as PS-7, constructed in 1999, controlled by a scrubber, identified as PSC-7, and exhausting to stack S-7, capacity: 0.4 tons of acid and 236 pounds of parts per hour.

(e) One (1) Pangborn roto blast machine, identified as PS-9a, constructed in 1999, controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-2, capacity: 15 dies per hour, 2,200 pounds of metal dies per hour, and 1,000 pounds of blast material per hour.

(f) Two (2) graphite die pattern cutting operations, identified as PS-9b, constructed in 1999, controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-2, capacity: 0.75 graphite electrodes per hour and 22 pounds of graphite per hour, total.

(g) Six (6) electrical discharge die cutting machines under an oil bath, identified as PS-10 a through f, constructed in 1999, exhausting to stacks S-10a through f, respectively, capacity: 0.75 die parts per hour, 375 pounds of die parts per hour, and 0.33 gallons of oil per hour, total.

(h) One (1) lime bag dumping station, identified as PS-11, constructed in 1999, controlled by a fabric filter, identified as PSC-11, and exhausting inside the building, capacity: 1,500 pounds of lime per hour.

(i) Wet abrasive and belt sanding operation, identified as PS-1, with a maximum capacity of 845 parts per hour, consisting of:

(1) three (3) wet abrasive saws and three (3) belt sanders, constructed in 1999, controlled by a fabric filter identified as PSC-1, and exhausting to stack S-1, with a maximum process weight rate of 12 pounds of metal parts per hour; total,

(2) two (2) machine-operated wet abrasive saws, identified as MS-1 and MS-2, constructed in 1999, exhausting to stack PT #S3, with a maximum process weight rate of 263 pounds of metal parts per hour, total,

(3) eleven (11) belt sanders, constructed in 1999, exhausting into the building, with a maximum process weight rate of 226 pounds of metal parts per hour; total, and

(4) one (1) inspection booth including a small sand blasting unit controlled by an internal fabric filter, constructed in 1999, with a maximum process weight rate of 28 pounds of metal parts per hour.

(j) Six (6) Glass Frit ESP spray gun units, identified as PS-4a through f, constructed in 1999, each controlled with an internal cellulose cartridge filter, capacity: 845 parts per hour, total.

(k) One (1) Goff shot blast machine, identified as PS-6b, constructed in 2001, controlled by an internal fabric filter, identified as PSC-6b, capacity: 100 pounds of parts and 2,600 pounds of shot per hour.

(l) Three (3) natural gas-fired process furnaces, identified as furnaces A1, B1 and G1, constructed in 1999, heat input capacity: 5.7 million British thermal units per hour, each.

(m) Two (2) natural gas-fired process furnaces, identified as furnaces E1 and BOX, constructed in 1999, heat input capacities: 4.2 and 0.65 million British thermal units per hour, respectively.

(n) One (1) natural gas-fired space heater, constructed in 1998 exhausting to stack S-13,

capacity: 1.25 million British thermal units per hour.

(o) One (1) molten salt bath cleaning operation with a 1.5 million British thermal unit per hour heater, identified as PS-12, constructed in 1998, exhausting to stack S-12.

(p) One (1) forge operation, consisting of twenty-two (22) machines, identified as PS-8a through v, constructed in 1999, each controlled by a fabric filter, identified as PSC-8a through v, exhausting into the building, capacity: 845 parts and 236 pounds per hour.

SECTION B GENERAL CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Permit Term and Renewal [326 IAC 2-6.1-7(a)] [326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions of this permit do not affect the expiration date.

The Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date. If a timely and sufficient permit application for a renewal has been made, this permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

B.5 Modification to Permit [326 IAC 2]

All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

B.7 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.

(c) A copy of the PMP's shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMP whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation, Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.8 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

(a) Permit revisions are governed by the requirements of 326 IAC 2-6.1-6.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality

100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1.

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

(d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.9 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)] [IC 13-14-2-2] [IC 13-20-3-1] [IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.10 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

B.11 Annual Fee Payment [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing.

(b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, I/M & Billing Section), to determine the appropriate permit fee.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 Particulate Emission Limitation For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.5 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are

mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-7-1(34).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements

C.6 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date.

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14 days) prior to the actual date.

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ, not later than forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.7 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA.

Compliance Monitoring Requirements

C.8 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.9 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.10 Compliance Response Plan - Preparation and Implementation

(a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ, upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the

Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:

(1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.

(2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan the Permittee shall amend its Compliance Response Plan to include such response steps taken.

(b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:

(1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or

(2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.

(3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be 10 days or more until the unit or device will be shut down, then the permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.

(4) Failure to take reasonable response steps shall be considered a deviation from the permit.

(c) The Permittee is not required to take any further response steps for any of the following reasons:

(1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.

(3) An automatic measurement was taken when the process was not operating.

(4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.

(d) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.11 Actions Related to Noncompliance Demonstrated by a Stack Test

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected emissions unit while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.12 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.13 General Record Keeping Requirements [326 IAC 2-6.1-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee

shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record Keeping requirements not already legally required shall be implemented when operation begins.

C.14 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) Reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) Unless otherwise specified in this permit, any semi-annual report required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

(d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description: Aircraft Engine Parts Manufacturing

(a) One (1) maintenance grind station, identified as PS-2, constructed in 1999, with a maximum capacity of 1 die and 500 pounds of metal dies per hour, all controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-1, consisting of:

(1) three (3) hand grind stations;

(2) one (1) band saw;

(3) two (2) welding stations;

(4) three (3) wet saws;

(5) three (3) belt sanders; and

(6) one (1) machine grinder.

(b) One (1) Wheelabrator steel shot blast machine, identified as PS-6, constructed in 1999, controlled by a fabric filter, identified as PSC-6, and exhausting to stack S-6, capacity: 200 parts per hour, 400 pounds of metal parts per hour, and 1,000 pounds of steel shot per hour.

(c) One (1) Irvin steel shot blast machine, identified as PS-6a, constructed in 1999, controlled by a fabric filter, identified as PSC-6a, and exhausting to stack S-6a, capacity: 500 parts per hour, 300 pounds of metal parts per hour, and 1,000 pounds of steel shot per hour.

(d) One (1) acid bath milling operation using hydrofluoric and sulfuric acids, identified as PS-7, constructed in 1999, controlled by a scrubber, identified as PSC-7, and exhausting to stack S-7, capacity: 0.4 tons of acid and 236 pounds of parts per hour.

(e) One (1) Pangborn roto blast machine, identified as PS-9a, constructed in 1999, controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-2, capacity: 15 dies per hour, 2,200 pounds of metal dies per hour, and 1,000 pounds of blast material per hour.

(f) Two (2) graphite die pattern cutting operations, identified as PS-9b, constructed in 1999, controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-2, capacity: 0.75 graphite electrodes per hour and 22 pounds of graphite per hour, total.

(g) Six (6) electrical discharge die cutting machines under an oil bath, identified as PS-10 a through f, constructed in 1999, exhausting to stacks S-10a through f, respectively, capacity: 0.75 die parts per hour, 375 pounds of die parts per hour, and 0.33 gallons of oil per hour, total.

(h) One (1) lime bag dumping station, identified as PS-11, constructed in 1999, controlled by a fabric filter, identified as PSC-11, and exhausting inside the building, capacity: 1,500 pounds of lime per hour.

(i) Wet abrasive and belt sanding operation, identified as PS-1, with a maximum capacity of 845 parts per hour, consisting of:

(1) three (3) wet abrasive saws and three (3) belt sanders, constructed in 1999, controlled by a fabric filter identified as PSC-1, and exhausting to stack S-1, with a maximum process weight rate of 12 pounds of metal parts per hour; total,

(2) two (2) machine-operated wet abrasive saws, identified as MS-1 and MS-2, constructed in 1999, exhausting to stack PT #S3, with a maximum process weight rate of 263 pounds of metal parts per hour, total,

(3) eleven (11) belt sanders, constructed in 1999, exhausting into the building, with a maximum process weight rate of 226 pounds of metal parts per hour; total, and

(4) one (1) inspection booth including a small sand blasting unit controlled by an internal fabric filter, constructed in 1999, with a maximum process weight rate of 28 pounds of metal parts per hour.*

(j) Six (6) Glass Frit ESP spray gun units, identified as PS-4a through f, constructed in 1999, each controlled with an internal cellulose cartridge filter, capacity: 845 parts per hour, total.

(k) One (1) Goff shot blast machine, identified as PS-6b, constructed in 2001, controlled by an internal fabric filter, identified as PSC-6b, capacity: 100 pounds of parts and 2,600 pounds of shot per hour.

(l) Three (3) natural gas-fired process furnaces, identified as furnaces A1, B1 and G1, constructed in 1999, heat input capacity: 5.7 million British thermal units per hour, each.

(m) Two (2) natural gas-fired process furnaces, identified as furnaces E1 and BOX, constructed in 1999, heat input capacities: 4.2 and 0.65 million British thermal units per hour, respectively.

(n) One (1) natural gas-fired space heater, constructed in 1998 exhausting to stack S-13, capacity: 1.25 million British thermal units per hour.

(o) One (1) molten salt bath cleaning operation with a 1.5 million British thermal unit per hour heater, identified as PS-12, constructed in 1998, exhausting to stack S-12.

(p) One (1) forge operation, consisting of twenty-two (22) machines, identified as PS-8a through v, constructed in 1999, each controlled by a fabric filter, identified as PSC-8a through v, exhausting into the building, capacity: 845 parts and 236 pounds per hour.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 Particulate [326 IAC 6-3-2(d)]

(a) Particulate from the surface coating, reinforced plastics composites fabricating manufacturing processes, or graphic arts manufacturing processes (six (6) Glass Frit ESP spray guns, identified as PS-4a through f) shall be controlled by a dry particulate filter, waterwash, or an equivalent control device, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

(b) If overspray is visibly detected at the exhaust or accumulates on the ground, the Permittee shall inspect the control device and do either of the following no later than four (4) hours after such observation:

(1) Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

(2) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

(c) If overspray is visibly detected, the Permittee shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

D.1.2 Particulate [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the one (1) maintenance grind station (including three (3) hand grinders, one (1) belt saw, two (2) welding stations, three (3) wet saws, three (3) belt sanders, and one (1) machine grinder), identified as PS-2, controlled by fabric filter PSC-2, shall not exceed 1.62 pounds per hour, total, when operating at a process weight rate of 500 pounds per hour, total.

(b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the one (1) Pangborn roto blast machine, identified as PS-9a, controlled by fabric filter PSC-2, shall not exceed 5.62 pounds per hour, when operating at a process weight rate of 3,200 pounds per hour.

(c) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the two (2) graphite die pattern cutting operations, identified as PS-9b, controlled by fabric filter PSC-2, shall not exceed 0.551 pounds per hour, total, when operating at a process weight rate of less than 100 pounds per hour, total.

(d) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the one (1) Wheelabrator shot blast machine, identified as PS-6, shall not exceed 3.24 pounds per hour, when operating at a process weight rate of 1,400 pounds per hour.

(e) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the one (1) Irvin steel shot blast machine, identified as PS-6a, shall not exceed 3.07 pounds per hour, when operating at a process weight rate of 1,300 pounds per hour.

(f) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the two (2) machine operated wet abrasive saws, identified as MS-1 and MS-2, shall not exceed 1.05 pounds per hour, when operating at a process weight rate of 263 pounds per hour.

(g) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the one (1) Goff shot blast machine, identified as PS-6b, shall not exceed 5.01 pounds per hour, when operating at a process weight rate of 2,700 pounds per hour.

The pounds per hour limitations were calculated using the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.4 Particulate Control

Pursuant to CP 035-9563-00011, issued on July 6, 1998, the fabric filters (PSC-1, PSC-2, PSC-6, PSC-6a, PSC-6b, PSC-11, and inspection booth filter) for particulate control and the scrubber (PSC-7) for SO_2 and HF control shall be in operation and control emissions from the facilities exhausting to those devices at all times when the facilities exhausting to that control device are in operation.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.5 Record Keeping Requirements

(a) To document compliance with Condition D.1.3, the Permittee shall maintain records of any inspections prescribed by the Preventive Maintenance Plan.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES ?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. : _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ _____ AM / PM

TYPE OF POLLUTANTS EMITTED: TSP, PM_{10}, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

*** Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

PAGE 2 OF 2

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	**Sermatech-AeroForge Corporation**
Address:	**3901 South Delaware Drive**
City:	**Muncie**
Phone #:	**(765) 747-7147**
MSOP #:	**035-18183-00059**

I hereby certify that Sermatech-AeroForge Corporation is

9 still in operation.

9 no longer in operation.

I hereby certify that Sermatech-AeroForge Corporation is

9 in compliance with the requirements of MSOP 035-18183-00059.

9 not in compliance with the requirements of MSOP 035-18183-00059.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for
a Minor Source Operating Permit

Source Background and Description

Source Name:	**Sermatech - AeroForge Corporation**
Source Location:	**3901 South Delaware Drive, Muncie, Indiana 47302**
County:	**Delaware**
SIC Code:	**3724**
Operation Permit No.:	**MSOP 035-18183-00059**
Permit Reviewer:	**CarrieAnn Paukowits**

The Office of Air Quality (OAQ) has reviewed an application from Sermatech-AeroForge Corporation relating to the operation of an aircraft engine parts manufacturing source.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) One (1) maintenance grind station, identified as PS-2, constructed in 1999, with a maximum capacity of 1 die and 500 pounds of metal dies per hour, all controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-1, consisting of:

(1) three (3) hand grind stations;

(2) one (1) band saw;

(3) two (2) welding stations;

(4) three (3) wet saws;

(5) three (3) belt sanders; and

(6) one (1) machine grinder.

(b) One (1) Wheelabrator steel shot blast machine, identified as PS-6, constructed in 1999, controlled by a fabric filter, identified as PSC-6, and exhausting to stack S-6, capacity: 200 parts per hour, 400 pounds of metal parts per hour, and 1,000 pounds of steel shot per hour.

(c) One (1) Irvin steel shot blast machine, identified as PS-6a, constructed in 1999, controlled by a fabric filter, identified as PSC-6a, and exhausting to stack S-6a, capacity: 500 parts per hour, 300 pounds of metal parts per hour, and 1,000 pounds of steel shot per hour.

(d) One (1) acid bath milling operation using hydrofluoric and sulfuric acids, identified as PS-7,

constructed in 1999, controlled by a scrubber, identified as PSC-7, and exhausting to stack S-7, capacity: 0.4 tons of acid and 236 pounds of parts per hour.

(e) One (1) Pangborn roto blast machine, identified as PS-9a, constructed in 1999, controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-2, capacity: 15 dies per hour, 2,200 pounds of metal dies per hour, and 1,000 pounds of blast material per hour.

(f) Two (2) graphite die pattern cutting operations, identified as PS-9b, constructed in 1999, controlled by a fabric filter, identified as PSC-2, and exhausting to stack S-2, capacity: 0.75 graphite electrodes per hour and 22 pounds of graphite per hour, total.

(g) Six (6) electrical discharge die cutting machines under an oil bath, identified as PS-10 a through f, constructed in 1999, exhausting to stacks S-10a through f, respectively, capacity: 0.75 die parts per hour, 375 pounds of die parts per hour, and 0.33 gallons of oil per hour, total.

(h) One (1) lime bag dumping station, identified as PS-11, constructed in 1999, controlled by a fabric filter, identified as PSC-11, and exhausting inside the building, capacity: 1,500 pounds of lime per hour.

Unpermitted Emission Units and Pollution Control Equipment

The source also consists of the following unpermitted facilities/units or facilities that were not constructed as permitted:

(i) Wet abrasive and belt sanding operation, identified as PS-1, with a maximum capacity of 845 parts per hour, consisting of:

(1) three (3) wet abrasive saws and three (3) belt sanders, constructed in 1999, controlled by a fabric filter identified as PSC-1, and exhausting to stack S-1, with a maximum process weight rate of 12 pounds of metal parts per hour; total,

(2) two (2) machine-operated wet abrasive saws, identified as MS-1 and MS-2, constructed in 1999, exhausting to stack PT #S3, with a maximum process weight rate of 263 pounds of metal parts per hour, total,

(3) eleven (11) belt sanders, constructed in 1999, exhausting into the building, with a maximum process weight rate of 226 pounds of metal parts per hour; total, and

(4) one (1) inspection booth including a small sand blasting unit controlled by an internal fabric filter, constructed in 1999, with a maximum process weight rate of 28 pounds of metal parts per hour.*

(j) Six (6) Glass Frit ESP spray gun units, identified as PS-4a through f, constructed in 1999, each controlled with an internal cellulose cartridge filter, capacity: 845 parts per hour, total.

(k) One (1) Goff shot blast machine, identified as PS-6b, constructed in 2001, controlled by an internal fabric filter, identified as PSC-6b, capacity: 100 pounds of parts and 2,600 pounds of shot per hour.

(l) Three (3) natural gas-fired process furnaces, identified as furnaces A1, B1 and G1, constructed in 1999, heat input capacity: 5.7 million British thermal units per hour, each.

(m) Two (2) natural gas-fired process furnaces, identified as furnaces E1 and BOX, constructed in 1999, heat input capacities: 4.2 and 0.65 million British thermal units per hour, respectively.

(n) One (1) natural gas-fired space heater, constructed in 1998 exhausting to stack S-13, capacity: 1.25 million British thermal units per hour.

(o) One (1) molten salt bath cleaning operation with a 1.5 million British thermal unit per hour heater, identified as PS-12, constructed in 1998, exhausting to stack S-12

(p) One (1) forge operation, consisting of twenty-two (22) machines, identified as PS-8a through v, constructed in 1999, each controlled by a fabric filter, identified as PSC-8a through v, exhausting into the building, capacity: 845 parts and 236 pounds per hour.

*Note that the inspection booth was constructed as permitted, but is listed here because it is part of PS-1.

New Emission Units and Pollution Control Equipment

There are no new facilities proposed at this source during this review process.

Existing Approvals

The source has constructed and has been operating under the following previous approvals including:

(a) CP 035-9563-00011, issued on July 6, 1998;

(b) Notice-Only Change 035-10729-00011, issued on April 21, 1999; and

(c) Notice-Only Change 035-10866-00059, issued on June 15, 1999.

The application for Notice-Only Change 035-12136 was incorporated into this approval.

All terms and conditions from previous approvals issued pursuant to the permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous approvals are superseded upon issuance of this permit.

The following terms and conditions from previous approvals have been revised in this permit:

CP 035-9563-00011, issued on July 6, 1998

Condition D.1.2, Particulate Matter Limitations [326 IAC 6-3-2]: The Permittee shall comply with the following PM emission limitations:

(a) The Wheelabrator abrasive saws exhausting to stack S1, shall be limited to 1.57 pounds of PM per hour.

(b) The H-Grind stations & M-Grind station exhausting to stack S2, shall be limited to 1.57 pounds of PM per hour.

(c) The Wheelabrator/Irvin shot blast machines exhausting to stack S6, shall be limited 4.10 pounds of PM per hour.

(d) The forge machine exhausting through stack S8 shall be limited to total PM emissions of 1.57 pounds per hour.

(e) The Pangborn roto steel grit blast machines, and graphite die pattern cutting operation exhausting to stack S9 shall be limited to 2.58 pounds of PM per hour.

(f) The lime bag dumping station exhausting to stack S11 shall be limited to 3.38 pounds of PM per hour.

(g) The surface coating operation shall comply with 326 IAC 6-3-2(c) using the following equation:

$E = 4.10P^{0.67}$ where: E = rate of emission in pounds per hour,
P = process weight in tons per hour, if
P is equal to or less than 60,000 lbs/hr (30 tons/hr)

Reasons revised: 326 IAC 6-3-2 was updated on June 12, 2002. As a result, some facilities are now exempt from the requirements of that rule. In addition, the requirements for surface coating have changed. The applicability of 326 IAC 6-3-2 has been re-evaluated during this review and the applicable limitations are calculated based on updated total process weight rates (see the *State Rule Applicability - Individual Facilities* section of this document).

The following terms and conditions from previous approvals have been determined to be no longer applicable, and, therefore, are not incorporated into this permit:

(a) CP 035-9563-00011, issued on July 6, 1998

Condition D.1.1, Volatile Organic Compound (VOC) [326 IAC 8-2-9]: Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), (a) the volume weighted average volatile organic compound (VOC) content of coating applied to the engine parts shall be limited to 3.5 pounds of VOCs per gallon of coating less water, as delivered to the applicator for any calender day, for forced warm air (less than 90EC or 194EF) dried coatings. (b) Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

Condition D.1.5, Volatile Organic Compounds (VOC): (a) Compliance with the VOC content and usage limitations contained in Conditions D.1.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3)(A) and 326 IAC 8-1-2(a)(7) using formulation data supplied by the coating manufacturer. (b) IDEM, OAM reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4. These tests shall be performed pursuant to 326 IAC 3-6 (Source Sampling Procedures), as stated in C.9, utilizing methods approved by the Commissioner.

Reason not incorporated: The lubricant used at this source has been replaced with a non-VOC Glass Frit lubricant. Therefore, the potential VOC emissions are less than fifteen (15) pounds per day from the metal coating operations, all constructed after January 1, 1990, and the requirements of 326 IAC 8-2-9 are not applicable. All associated record keeping requirements from Condition D.1.10 are also not included in this permit.

(b) CP 035-9563-00011, issued on July 6, 1998

Condition D.1.4, Particulate Matter (PM) [326 IAC 2-1-3]: The Permittee shall perform particulate matter (PM) testing on stack S9 within 60 days after achieving maximum one (1) maintenance grind station (including three (3) hand grinders, one (1) band saw, two (2) welding stations, three (3) wet saws, three (3) belt sanders, and one (1) machine grinder), identified as PS-2, one (1) Pangborn roto blast machine, identified as PS-9a, and two (2) graphite die pattern cutting operations, identified as PS-9b, production rate, but no later than 180 days after initial start-up, utilizing Methods 9 or 17 (40 CFR 60, Appendix A) for PM or other methods as approved by the commissioner.

Reason not incorporated: There is no stack S9. The Pangborn roto blast machine exhausts through fabric filter PSC-2 and stack S2, along with the one (1) maintenance grind station, identified as PS-2, and two (2) graphite die pattern cutting operations, identified as PS-9b. The potential emissions are much less than those anticipated during construction approval. Therefore, no testing is required.

(c) CP 035-9563-00011, issued on July 6, 1998

Condition D.1.8, Visible Emissions Notations: Visible emission notations of all exhaust to the atmosphere from the fabric filters (baghouses) shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Condition D.1.9, Parametric Monitoring for Baghouses: The Permittee shall take readings of the total static pressure drop across the baghouse tubesheets, at least once per day while the baghouse is in operation when exhausting to the atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 0.5 and 12 inches of water. The Preventive Maintenance Plan for these baghouses shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading. The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

Reasons not incorporated: The allowable PM emissions from each controlled process is less than ten (10) pounds per hour, and the unrestricted potential emissions from each process is less than twenty-five (25) tons per year. Therefore, no visible emissions notations or parametric monitoring is required. All associated record keeping requirements from Condition D.1.10 are also not included in this permit.

(d) Condition B.3 (d) and (e): The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees). Pursuant to 326 IAC 2-7-4, the Permittee shall apply for a Title V operating permit within twelve (12) months after the source becomes subject to Title

V. This 12-month period starts at the postmarked submission date of the Affidavit of Construction. If the construction is completed in phases, the 12-month period starts at the postmarked submission date of the Affidavit of Construction that triggers the Title V applicability. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

Reason not incorporated: Due to changes made during construction, the source is not subject to the requirements of 326 IAC 2-7, Part 70, and a Title V Operating Permit is not required at this time.

(e) All construction conditions from all previous permits.

Reason not incorporated: All facilities previously permitted have already been constructed. Therefore, the construction conditions are no longer necessary as part of the operating permit. Any facilities that were previously permitted but have not yet been constructed would need new pre-construction approval before beginning construction.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
S-1	Three (3) wet saws and three (3) belt sanders	25.0	1.0	3,000	70
S-2	One (1) Pangborn roto blast machine, two (2) graphite die cutting mills, three (3) hand grinder stations, one (1) band saw, two (2) welding stations, three (3) wet saws, three (3) belt sanders and one (1) machine grinder	25.0	2.5	15,000	70
S-3	Two (2) machine operated wet abrasive saws (MS-1 and MS-2)	30.0	1.0	4,800	70
S-6	Wheelabrator shot blaster (PS-6)	25.0	0.83	3,500	70
S-6a	Irvin shot blaster (PS-6a)	25.0	0.83	3,500	70
S-7	Acid Bath Milling Operation	30.0	2.0	10,000	70
S-10a	Electrical Discharge Die Cutting Machine (PS-10a)	30.0	0.83	1,900	70
S-10b	Electrical Discharge Die Cutting Machine (PS-10b)	30.0	0.83	1,900	70
S-10c	Electrical Discharge Die Cutting Machine (PS-10c)	30.0	0.83	1,900	70

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
S-10d	Electrical Discharge Die Cutting Machine (PS-10d)	30.0	0.83	1,900	70
S-10e	Electrical Discharge Die Cutting Machine (PS-10e)	30.0	0.83	1,900	70
S-10f	Electrical Discharge Die Cutting Machine (PS-10f)	30.0	0.83	1,900	70
S-12	Molten Salt Bath (PS-12)	30.0	3.0	122	70
S-13	Space Heater	25.0	0.35	unknown	150

Enforcement Issue

(a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the heading *Unpermitted Emission Units and Pollution Control Equipment.*

(b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 29, 2003, with additional information received on December 1, 2003.

Emission Calculations

See pages 1 through 7 of 7 of Appendix A of this document for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	36.0

Pollutant	Potential To Emit (tons/year)
PM_{10}	36.6
SO_2	0.375
VOC	9.91
CO	9.09
NO_X	10.8

HAPs	Potential To Emit (tons/year)
Manganese	0.00008
Hydrogen Fluoride	0.434
Benzene	0.0002
Dichlorobenzene	0.0001
Formaldehyde	0.008
Hexane	0.195
Toluene	0.0004
Lead	0.0001
Cadmium	0.0001
Chromium	0.0002
Nickel	0.0002
TOTAL	0.638

(a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM_{10} are equal to or greater than twenty-five (25) tons per year, but less than one hundred (100) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.

(b) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Actual Emissions

No previous emission data has been received from the source.

Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	**PM**	**PM_{10}**	**SO_2**	**VOC**	**CO**	**NO_X**	**HAPs**
One (1) maintenance grind station (PS-2),one (1) Pangborn roto blast machine (PS-9a), two (2) graphite die pattern cutting operations (PS-9b), all controlled by fabric filter PSC-2	5.24	5.24	-	-	-	-	0.00004
One (1) Wheelabrator steel shot blast machine (PS-6)	3.29	3.29	-	-	-	-	-
One (1) Irvin steel shot blast machine (PS-6a)	3.29	3.29	-	-	-	-	-
One (1) acid bath milling operation (PS-7)	-	-	0.310	-	-	-	0.434
Six (6) electrical discharge die cutting machines (PS-10 a - f)	-	-	-	9.31	-	-	-
One (1) lime bag dumping station (PS-11)	0.788	0.788	-	-	-	-	-
Wet abrasive and belt sanding operation (PS-1)	15.8	15.8	-	-	-	-	-
Six (6) Glass Frit ESP spray gun units (PS-4a - f)	0.043	0.043	-	-	-	-	-
One (1) Goff shot blast machine (PS-6b)	2.93	2.93	-	-	-	-	-

	Limited Potential to Emit (tons/year)						
Process/facility	**PM**	**PM_{10}**	**SO_2**	**VOC**	**CO**	**NO_X**	**HAPs**
Five (5) natural gas-fired process furnaces and one (1) space heater, and One (1) molten salt bath cleaning operation	0.206	0.822	0.065	0.595	9.09	10.8	0.204
One (1) forge operation, consisting of twenty-two (22) machines, identified as PS-8a through v,	0.258	0.258	-	-	-	-	-
Total Emissions	31.8	32.5	0.375	9.91	9.09	10.8	0.638

The values in the table represent the unrestricted potential emissions from all facilities, except for the six (6) Glass Frit ESP spray gun units. Those units require the use of the cartridge filters in order to comply with 326 IAC 6-3-2. Therefore, the values in the table represent the potential to emit after controls for the six (6) Glass Frit ESP spray gun units.

County Attainment Status

The source is located in Delaware County.

Pollutant	Status
PM_{10}	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Delaware County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) Delaware County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for

Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source based on the emissions summarized in this permit, MSOP 035-18183-00059, is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than one hundred (100) tons per year,

(b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and

(c) any combination of HAPs is less than twenty-five (25) tons per year.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14, 326 IAC 20, 40 CFR 61 and 40 CFR Part 63) applicable to this source.

(c) The requirements of Section 112(j) of the Clean Air Act (40 CFR Part 63.50 through 63.56) are not applicable to this source because the source is not a major source of hazardous air pollutant (HAP) emissions (i.e., the source does not have the potential to emit 10 tons per year or greater of a single HAP or 25 tons per year or greater of a combination of HAPs) and the source does not include one or more units that belong to one or more source categories affected by the Section 112(j) MACT Hammer date of May 15, 2002.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The unrestricted potential emissions of PM, PM_{10}, VOC, NO_X, CO and SO_2 from this source, located in Delaware County, are less than 250 tons per year. Therefore, the requirements of 326 IAC 2-2, PSD, are not applicable.

326 IAC 2-4.1-1 (New Source Toxics Control)

This source has potential emissions of a single HAP and any combination of HAPs that are less than the major source levels of ten (10) and twenty-five (25) tons per year, respectively. Therefore, this source is not subject to the requirements of 326 IAC 2-4.1-1.

326 IAC 2-6 (Emission Reporting)

This source is located in Delaware County and the potential to emit PM_{10}, VOC, CO, SO_2 and NO_X is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 8-1-6 (New Facilities; General reduction requirements)

The potential VOC emissions from each facility at this source are less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

The lubricant at this source is a non-VOC Glass Frit lubricant. Therefore, the potential VOC emissions are less than fifteen (15) pounds per day from metal coating operations, all constructed after January 1, 1990, and the requirements of 326 IAC 8-2-9 are not applicable.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

(a) Pursuant to 326 IAC 6-3-2(h), particulate from the surface coating manufacturing processes (six (6) Glass Frit ESP spray guns, identified as PS-4a through f) shall be controlled by a dry particulate filter, waterwash, or an equivalent control device, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

If overspray is visibly detected at the exhaust or accumulates on the ground, the Permittee shall inspect the control device and do either of the following no later than four (4) hours after such observation:

Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

If overspray is visibly detected, the Permittee shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

(b) Pursuant to 326 IAC 6-3-2, the particulate emissions from all other manufacturing processes at this source, which are not exempt from the requirements of this rule are limited as follows:

(1) The particulate from the one (1) maintenance grind station (including three (3) hand grinders, one (1) belt saw, two (2) welding stations, three (3) wet saws, three (3) belt

sanders, and one (1) machine grinder), identified as PS-2, controlled by fabric filter PSC-2, shall not exceed 1.62 pounds per hour, total, when operating at a process weight rate of 500 pounds per hour, total. Since the unrestricted potential particulate emissions are 1.20 pounds per hour from the total of all facilities exhausting through fabric filter PSC-2, the one (1) maintenance grind station will comply with this rule.

(2) The particulate from the one (1) Pangborn roto blast machine, identified as PS-9a, controlled by fabric filter PSC-2, shall not exceed 5.62 pounds per hour, when operating at a process weight rate of 3,200 pounds per hour (2,200 pound of metal parts and 1,000 pounds of blast material). Since the unrestricted potential particulate emissions are 1.20 pounds per hour from the total of all facilities exhausting through fabric filter PSC-2, the one (1) Pangborn roto blast machine will comply with this rule.

(3) The particulate from the two (2) graphite die pattern cutting operations, identified as PS-9b, controlled by fabric filter PSC-2, shall not exceed 0.551 pounds per hour, total, when operating at a process weight rate of less than 100 pounds per hour, total. Since the unrestricted potential particulate emissions are 1.20 pounds per hour from the total of all facilities exhausting through fabric filter PSC-2, the two (2) graphite die pattern cutting operations will comply with this rule.

(4) The particulate from the one (1) Wheelabrator shot blast machine, identified as PS-6, shall not exceed 3.24 pounds per hour, when operating at a process weight rate of 1,400 pounds per hour (400 pounds of metal parts and 1,000 pounds of steel shot). Since the unrestricted potential particulate emissions are 0.750 pounds per hour, the one (1) Wheelabrator shot blast machine will comply with this rule.

(5) The particulate from the one (1) Irvin steel shot blast machine, identified as PS-6a, shall not exceed 3.07 pounds per hour, when operating at a process weight rate of 1,300 pounds per hour (300 pounds of metal parts and 1,000 pounds of steel shot). Since the unrestricted potential particulate emissions are 0.750 pounds per hour, the one (1) Irvin steel shot blast machine will comply with this rule.

(6) The particulate from the two (2) machine operated wet abrasive saws, identified as MS-1 and MS-2, shall not exceed 1.05 pounds per hour, when operating at a process weight rate of 263 pounds per hour. Since the unrestricted potential particulate emissions are 1.00 pound per hour, the two (2) machine operated wet abrasive saws, identified as MS-1 and MS-2, will comply with this rule.

(7) The particulate from the one (1) Goff shot blast machine, identified as PS-6b, shall not exceed 5.01 pounds per hour, when operating at a process weight rate of 2,700 pounds per hour (100 pounds of metal parts and 2,600 pounds of shot). Since the unrestricted potential particulate emissions are 0.669 pounds per hour, the one (1) Goff shot blast machine will comply with this rule.

These limitations are based upon the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

Note that the operation of control devices is not required in order to demonstrate compliance with 326 IAC 6-3-2 at these facilities. However, the source will be required to operate the controls as a monitoring condition pursuant to CP 035-9563-00011, issued on July 6, 1998, and because emissions are calculated based on control device parameters.

(c) The potential particulate emissions from the following facilities are less than 0.551 pounds per hour. Therefore, pursuant to 326 IAC 6-3-1(b)(14) these processes are exempt from the requirements of 326 IAC 6-3-2:

(1) Six (6) electrical discharge die cutting machines under an oil bath

(2) One (1) lime bag dumping station

(3) Three (3) wet abrasive saws and three (3) belt sanders, all controlled by a fabric filter identified as PSC-1

(4) Eleven (11) belt sanders

(5) One (1) inspection booth

(6) Process furnaces (the only emissions from the process furnaces is combustion emissions since the furnaces are used to heat, but not melt, the metal)

(7) One (1) forge operation

326 IAC 9-1 (Carbon Monoxide Emission Limits)

This source is a stationary sources of carbon monoxide (CO) emissions, which commenced operation after March 21, 1972. However, this source does not perform petroleum refining, ferrous metal smelting or refuse incineration. Therefore, the requirements of 326 IAC 9-1 are not applicable.

326 IAC 11-1 (Existing Foundries)

Metal processed at this source is softened by heating, but not melted. This source does not work with molten metal and is not considered a foundry. Therefore, the requirements of 326 IAC 11-1 are not applicable.

Conclusion

The operation of this aircraft engine parts manufacturing source shall be subject to the conditions of the attached proposed Minor Source Operating Permit 035-18183-00059.

Appendix A: Emission Calculations
Process Operations with Filters and Uncontrolled Sanding

Company Name: Sermatech-AeroForge Corporation
Address City IN Zip: 3901 South Delaware Drive, Muncie, IN 47302
Permit Number: 035-18183
Plt ID: 035-00059
Reviewer: CarrieAnn Paukowits
Date: September 29, 2003

Unit ID	Control Efficiency (%)	Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.)	Gas or Air Flow Rate (acfm.)	PM Emission Rat before Controls (lb/hr)	PM Emission Rat before Controls (tons/yr)	PM Emission Rat after Controls (lb/hr)	PM Emission Rate after Controls (tons/yr)
PSC-1	99.9%	0.000019	3000	0.489	2.14	0.0005	0.002
Inspection Booth Filter	99.0%	0.0009	400	0.309	1.35	0.003	0.014
PSC-2	99.0%	0.000093	15000	1.20	5.24	0.012	0.052
PSC-6	99.9%	0.000025	3500	0.750	3.29	0.0008	0.003
PSC-6a	99.9%	0.000025	3500	0.750	3.29	0.0008	0.003
PSC-6b	99.9%	0.000100	780	0.669	2.93	0.0007	0.003
PSC-11	99.9%	0.000020	1050	0.180	0.788	0.0002	0.001
				4.34	19.0	0.018	0.078

Methodology
PM = PM10
Emission Rate in lbs/hr (after controls) = (grains/cub. ft.) (sq. ft.) ((cub. ft./min.)/sq. ft.) (60 min/hr) (lb/7000 grains)
Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Emission Rate in lbs/hr (before controls) = Emission Rate (after controls): (lbs/hr)/(1-control efficiency)
Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

	Number of Units	PM Emission Rate before controls from three (3) controlled units (lbs/hr)	PM Emission rate (lbs/hr)	PM Emission rate (tons/yr)
Uncontrolled Belt sanders	11	0.49	1.79	7.85

Methodology
PM = PM10
PM emission rate (lbs/hr) = PM emission rate before controls from three (3) controlled units x 11/3
PM emission rate (tons/yr) = PM emission rate (lbs/hr) x 8,760 hrs/yr / 2,000 lbs/ton

Appendix A: Emission Calculations
Particulate Emissions
Wet Saws

Company Name: Sermatech-AeroForge Corporation
Address City IN Zip: 3901 South Delaware Drive, Muncie, IN 47302
Permit Number: 035-18183
Plt ID: 035-00059
Reviewer: CarrieAnn Paukowits
Date: September 29, 2003

Unit ID	Production Schedule (hrs/yr)	Weight of Material Collected (lbs/yr)	Amount Collected (lbs/hr)	Potential Collected (tons/yr)	Control Efficiency	PM Potential Generated (lbs/hr)	PM Potential Generated (tons/yr)	PM Emissions after controls (lbs/hr)	PM Emissions after controls (tons/yr)
MS-1 and MS-2	4000	3600	0.900	3.94	90.0%	1.00	4.38	0.100	0.438

Methodology

PM = PM10

Actual collected (lbs/hr) = Weight of Material Collected (lbs/yr) / Production schedule (hrs/yr)
Potential collected (tons/yr) = Amount collected (lbs/hr) x 8,760 hrs/yr / 2,000 lbs/ton
Potential generated (lbs/hr) = Amount collected (lbs/hr) / control efficiency (%)
Potential generated (tons/yr) = Potential generated (lbs/hr) * (8760 hr/yr) * (ton/2000 lb)
Emissions after controls (lbs/hr) = Potential generated (lbs/hr) * (1-control efficiency (%))
Emissions after controls (tons/yr) = Emissions after controls (lbs/hr) * (8760 hr/yr) * (ton/2000 lb)

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Sermatech-AeroForge Corporation
Address City IN Zip: 3901 South Delaware Drive, Muncie, IN 47302
Permit Number: 035-18183
Plt ID: 035-00059
Reviewer: CarrieAnn Paukowits
Date: September 29, 2003

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
WELDING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Submerged Arc	0	0		0.036	0.011			0.000	0.000	0.000	0.000	0.000
Metal Inert Gas (MIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0.000	0.000
Stick (E7018 electrode)	0	0		0.0211	0.0009			0.000	0.000	0.000	0.000	0.000
Tungsten Inert Gas (TIG)(carbon ste	2	0.008		0.0055	0.0005			0.00009	0.000008	0.000	0.000	0.000008
Oxyacetylene(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0.000	0.000
	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
FLAME CUTTING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	0	0	0	0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane	0			0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**	0	0	0	0.0039				0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.00009	0.00001	0.00	0.00	0.00001
Potential Emissions lbs/day								0.002	0.0002	0.00	0.00	0.0002
Potential Emissions tons/year								0.0004	0.00004	0.00	0.00	0.00004

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process colun
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculting the emissions.
Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 m
Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,00
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode use
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,0(

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: **Sermatech-AeroForge Corporation**
Address City IN Zip: **3901 South Delaware Drive, Muncie, IN 47302**
Permit Number: **035-18183**
Plt ID: **035-00059**
Reviewer: **CarrieAnn Paukowits**
Date: **###############**

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Glass Frit ESP																
Oxylub-174	5.6	0.000%	0.0%	0.0%	0.0%	100.00%	0.00059	845	0.00	0.00	0.00	0.00	0.00	4.28	0.00	65%
Forges																
14-462LB DR (Graphite)	9.4	90.1%	90.1%	0.0%	95.0%	5.00%	0.00009	845	0.00	0.00	0.00	0.00	0.00	0.258	0.00	15%
Die Cutting																
Norpar 15 (oil bath)	6.4	100%	0.0%	100.0%	0.0%	0.00%	0.44000	0.750	6.44	6.44	2.13	51.0	9.31	0.00	n/a	100%

PM Control Efficiency glass frit: 99.00%
PM Control Efficiency graphite: 96.75%

State Potential Emissions	**Add worst case coating to all solvents**	**Uncontrolled**	**2.13**	**51.0**	**9.31**	**4.54**
		Controlled	**2.13**	**51.0**	**9.31**	**0.008**

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
Acid Milling

Company Name: Sermatech-AeroForge Corporation
Address City IN Zip: 3901 South Delaware Drive, Muncie, IN 47302
Permit Number: 035-18183
Plt ID: 035-00059
Reviewer: CarrieAnn Paukowits
Date: September 29, 2003

*** * SO2 emissions before controls * ***

Acid Cleaning Bath (pickling)	0.118	ton/hr x	0.60	lb/ton	/ 2000 lb/ton x	8760	hr/yr =	0.310	tons/yr

AIRS SCC 3-09-011-02

*** * SO2 emissions after controls * ***

Acid Cleaning Bath (pickling)	0.31	tons/yr x	1%	emitted after controls =				0.003	tons/yr

*** * HF emissions before controls * ***

Acid Cleaning Bath (pickling)	0.118	ton/hr x	0.84	lb/ton	/ 2000 lb/ton x	8760	hr/yr =	0.434	tons/yr

Emission factor for HF determined in the review of CP 035-9563-00011, issued on July 6, 1998, based on the ratio of HF acid to sulfuric acid in the bath.

*** * HF emissions after controls * ***

Acid Cleaning Bath (pickling)	0.43	tons/yr x	1%	emitted after controls =				0.004	tons/yr

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Sermatech-AeroForge Corporation
Address City IN Zip: 3901 South Delaware Drive, Muncie, IN 47302
Permit Number: 035-18183
Plt ID: 035-00059
Reviewer: CarrieAnn Paukowits
Date: September 29, 2003

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	0.600	100 **see below	5.50	84.0

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Equipment	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Potential Emission in tons/yr					
			PM*	PM10*	SO2	NOx	VOC	CO
Process furnace A1	5.70	49.932	0.047	0.190	0.015	2.497	0.137	2.097
Process furnace B1	5.70	49.932	0.047	0.190	0.015	2.497	0.137	2.097
Process furnace G1	5.70	49.932	0.047	0.190	0.015	2.497	0.137	2.097
Process furnace E1	4.20	36.792	0.035	0.140	0.011	1.840	0.101	1.545
Process furnace BOX	0.65	5.694	0.005	0.022	0.002	0.285	0.016	0.239
Space Heater	1.25	10.95	0.010	0.042	0.003	0.548	0.030	0.460
Molten Salt Bath heater	1.50	13.14	0.012	0.050	0.004	0.657	0.036	0.552
Total	**24.7**	**216**	**0.206**	**0.822**	**0.065**	**10.8**	**0.595**	**9.09**

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
See page 7 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company Name: Sermatech-AeroForge Corporation
Address City IN Zip: 3901 South Delaware Drive, Muncie, IN 47302
Permit Number: 035-18183
Plt ID: 035-00059
Reviewer: CarrieAnn Paukowits
Date: September 29, 2003

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	0.002	0.001	0.075	1.80	0.003
Potential Emission in tons/yr	0.0002	0.0001	0.008	0.195	0.0004

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel	Total HAPs
Emission Factor in lb/MMcf	0.0005	0.001	0.001	0.0004	0.002	
Potential Emission in tons/yr	0.0001	0.0001	0.0002	0.0000	0.0002	**0.204**

Methodology is the same as page 6.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.